

The Bureau of Land Management

The Bureau of Land Management (BLM) is a federal government agency that takes care of nearly 245 million acres of public lands containing over half of the sagebrush community of plants and animals in the United States. These lands, primarily in the western states, belong to you and all Americans. The BLM also manages a number of smaller public land sites in the eastern United States.



These lands provide habitat for wildlife, food for livestock and timber. They provide many other natural resources, too, such as coal, oil, natural gas and minerals. The lands contain evidence of the past, such as dinosaur bones and plant fossils. Archaeological sites on public lands help us learn about people who lived here long ago. Today, people like you enjoy exploring the vast open spaces on public lands.

The Junior Ranger Program



M. Meier

The Junior Ranger Program introduces young adventurers to public lands and the resources they contain. After you complete the activities in this book-



let, clip out the Junior Ranger Certificate on the last page, recite the Junior Ranger pledge and sign your name. Then, keep the pledge as you continue to explore your public lands.

This publication is part of the BLM Junior Ranger series of the BLM Division of Education, Interpretation, and Partnerships. Visit our website to learn more about the BLM Junior Ranger Program at www.blm.gov/learn/youth-and-educators/junior-ranger-program.

For answers to the activity pages or a copy of this Junior Ranger guide, visit www.idahofireinfo.com/p/sammy-sage-grouse.html.

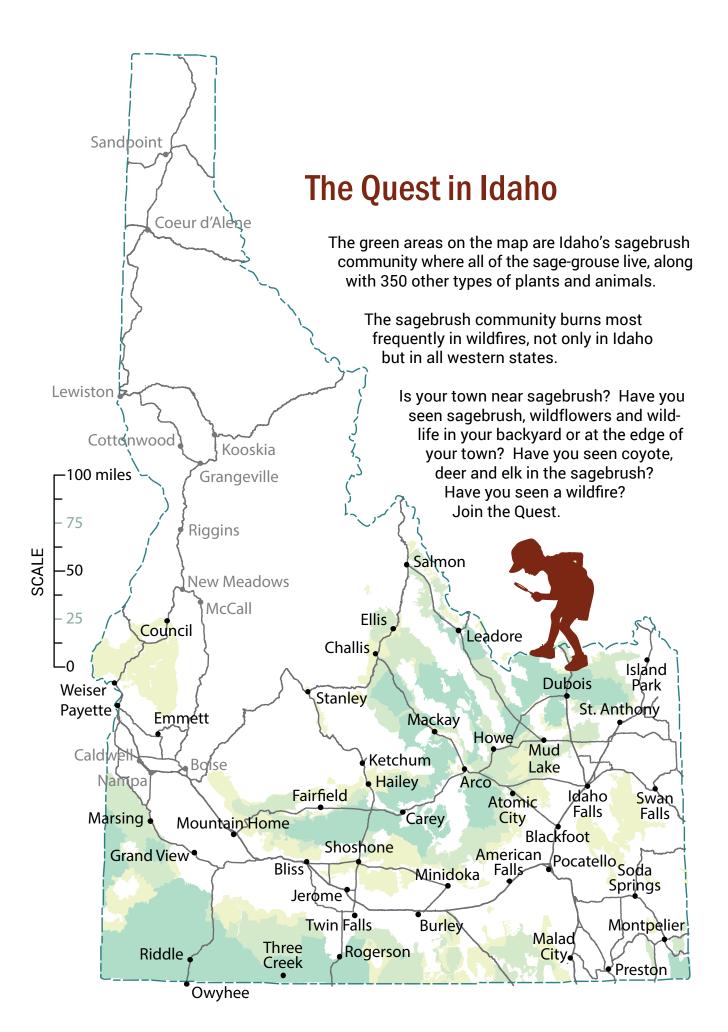


JUNIOR RANGER SERIES



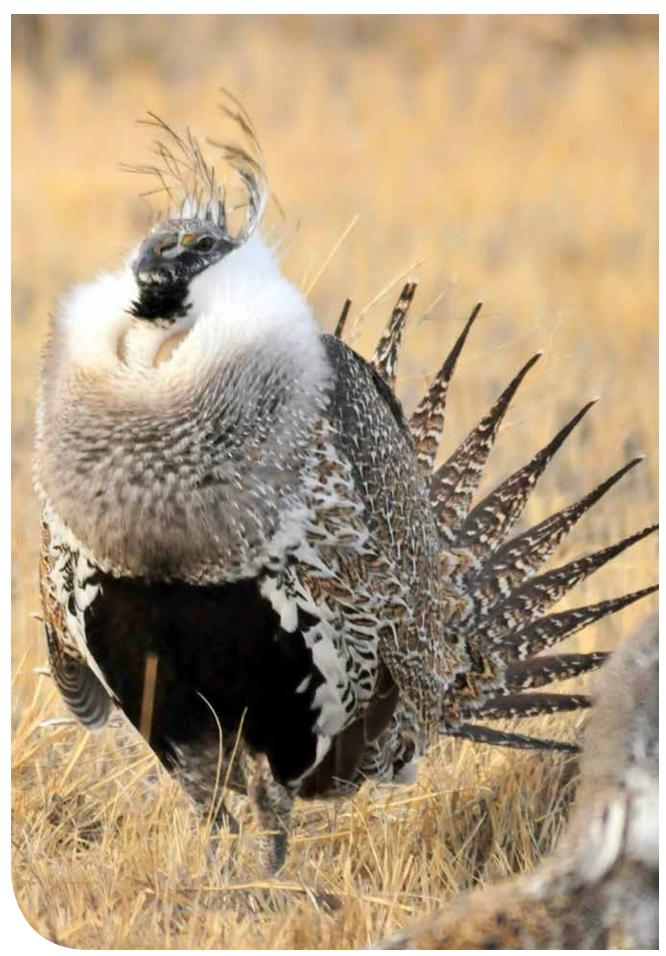
Sammy's Quesz To Save the West

BLM Fire and Aviation Idaho State Office 1387 South Vinnell Way Boise, ID 83709 208-373-3963





Greater sage-grouse males have a white collar, black belly feathers and are less colorful during the summer, fall and winter. Tom Koerner, USFWS



Sammy, a Greater Sage-grouse male, is very colorful during the spring mating season.

Hello, Junior Ranger!

My name is Sammy. Sage-grouse like me and over 350 plants and animals call sagebrush lands home. We need sagebrush and the insects and other plants found around it to survive. We live nowhere else on Earth but western North America—including Idaho—which gives us a chance to get to know each other.

Our sagebrush home...

- serves as a nursery that protects young elk, golden eagles, mule deer, pronghorn antelope, pygmy rabbits and sagebrush lizards so they can grow into strong adults.
- is home to tribal nations, who hunt, fish and gather plants and minerals.
- provides beautiful open spaces where people find fun, recreation and renewal.
- yields food for livestock and materials for roads, schools, homes and cars.
- contains energy resources to fuel the country's economy.
- is part of America's western heritage.

Why care about our sagebrush home?

- Wildfire burns more of it every year than any other kind of place in the United States.
- It is only half the size it used to be, because of wildfires, invading plants and other factors.
- Many partners are working together to restore healthy plants to benefit wildlife and people.

I can't wait to show you around and introduce you to all the interesting places that you'll find here. We'll do some fun activities that explain how we sage-grouse meet various challenges to our survival and will help you find ways to protect the sagebrush lands and all of us who live here.

Thanks for letting me share this unique world with you!

Your friend, Sammy



Greater Sage-grouse:

- weigh about five pounds, about as much as a chicken
- have white speckles on brown and black feathers
- stay on the ground most of the time because of their large size
- can fly at speeds of up to 50 miles per hour, to escape predators or wildfire



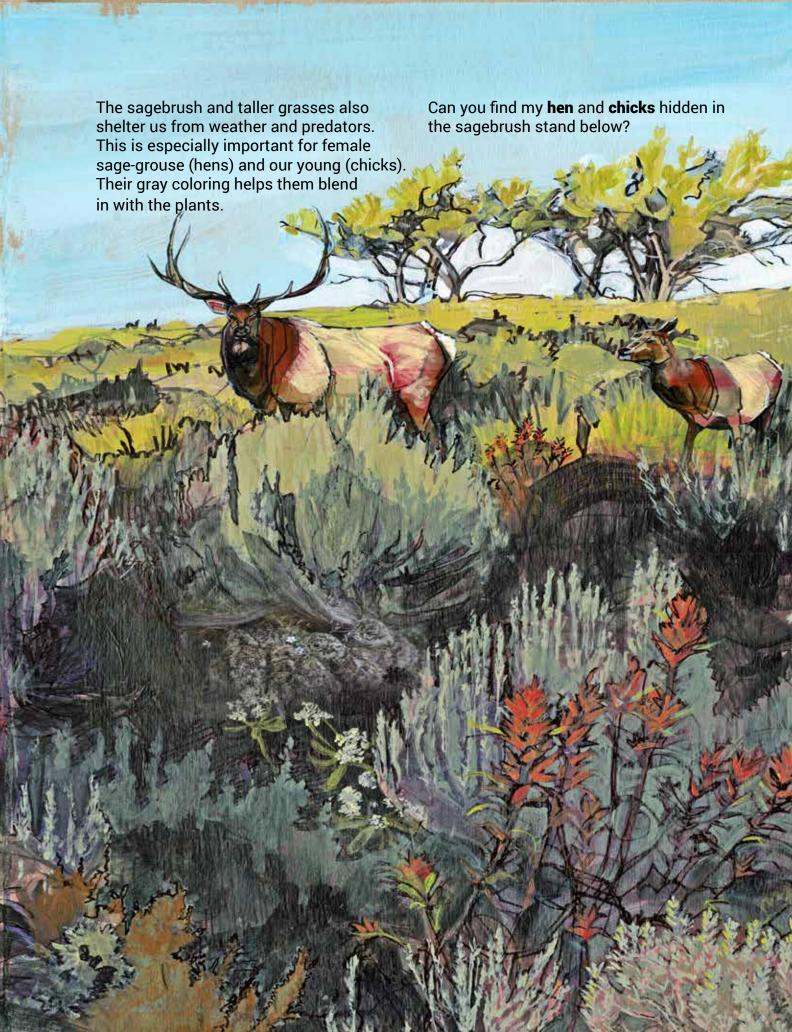
Volunteers watch a biologist from the Idaho Fish and Game demonstrate how to plant a sagebrush seedling in an area burned by wildfire. Photo BLM

At Home in the Sagebrush Steppe

Many wildflowers, grasses, shrubs and cactuses grow where I live. There are also trees like mountain mahogany and juniper. This community of plants and the animals they support is called an **ecosystem**. The ecosystem shown below is called the **sagebrush steppe**. "Steppe" is a word for a large, flat grassland. In Idaho, sagebrush steppe is the area between rivers and forests. It is usually hot and dry in the summer and cold and windy in winter.

We sage-grouse rely completely on sagebrush and other plants of the steppe for our health and survival. Sagebrush is our favorite food and just about the only thing we eat in the winter. In other seasons, we eat native grasses, leaves, flowers, buds and insects that also live on these plants.





Plants Growing in the Sagebrush Steppe

DRAW AN ARROW TO MATCH EACH PLANT NAME TO THE CORRECT PHOTO.



grows in large grassy bunches and is named for its bluish-green coloring.

Arrowleaf Balsamroot

has yellow flowers that look like sunflowers with large, pointed leaves.

Lupine

has purple flower clusters and grows 10-15 leaves from a single center point.

Indian Paintbrush

has bright red leaves that grow taller on a stalk than the green leaves.



Did You Know?

There are about 200 kinds of plants in the sagebrush steppe.











DRAW AN ARROW TO MATCH EACH PLANT NAME TO THE CORRECT PHOTO.

Juniper is a bushy-looking tree that has very small blue berries.

Wild Onion

has white to pink flowers and small underground bulbs.

Rabbitbrush

is a shrub that grows in a mound with small yellow flower clusters.

Mountain Mahogany is a tree that grows on steep

slopes and provides an umbrella for shade.

Western Yarrow

has white flower clusters and leaves that look like ferns.



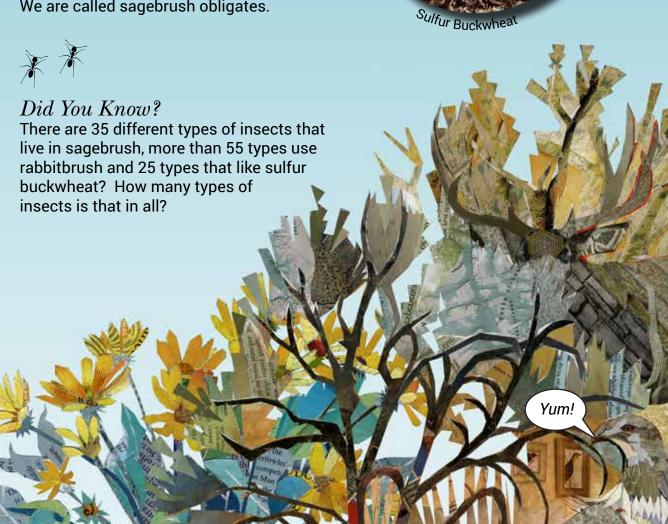
Sagebrush—my favorite!

Of the 21 different types of sagebrush, the low-growing kind feeds me during the winter. I also eat my favorite wildflower, sulfur buckwheat, western yarrow, leaves, buds and some insects.

I cannot survive without sagebrush. This is true for other animals like pygmy rabbits. We are called sagebrush obligates.



Hedrick, BLM | Matt Lavin, MSU



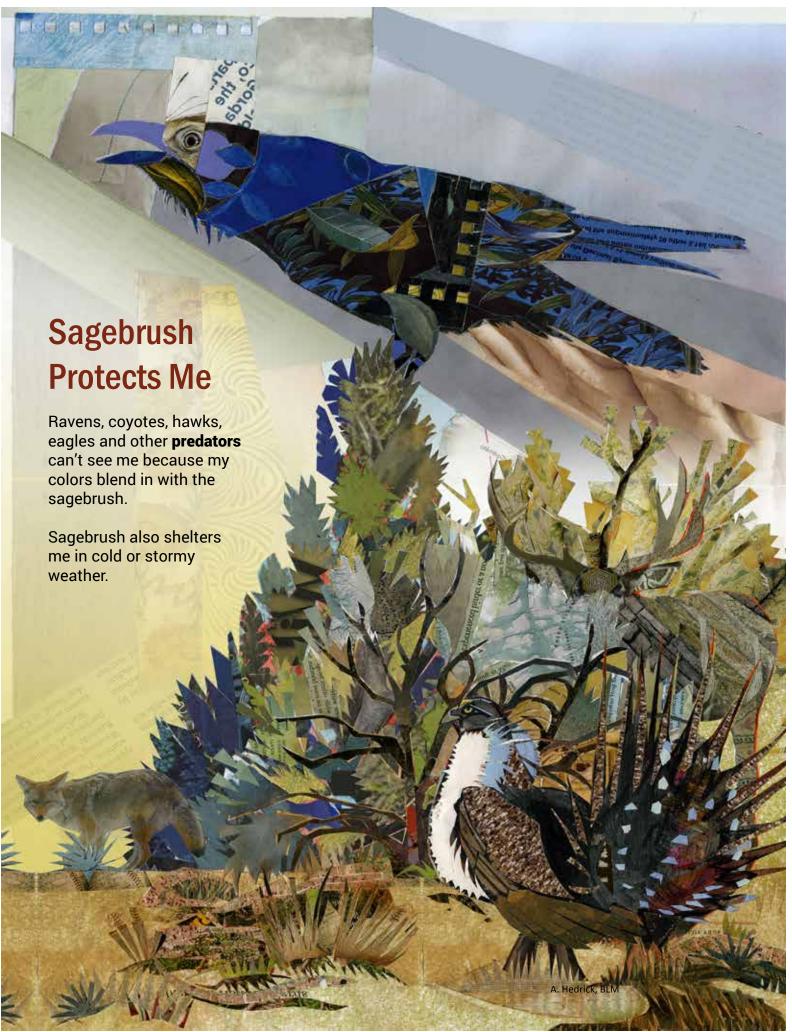


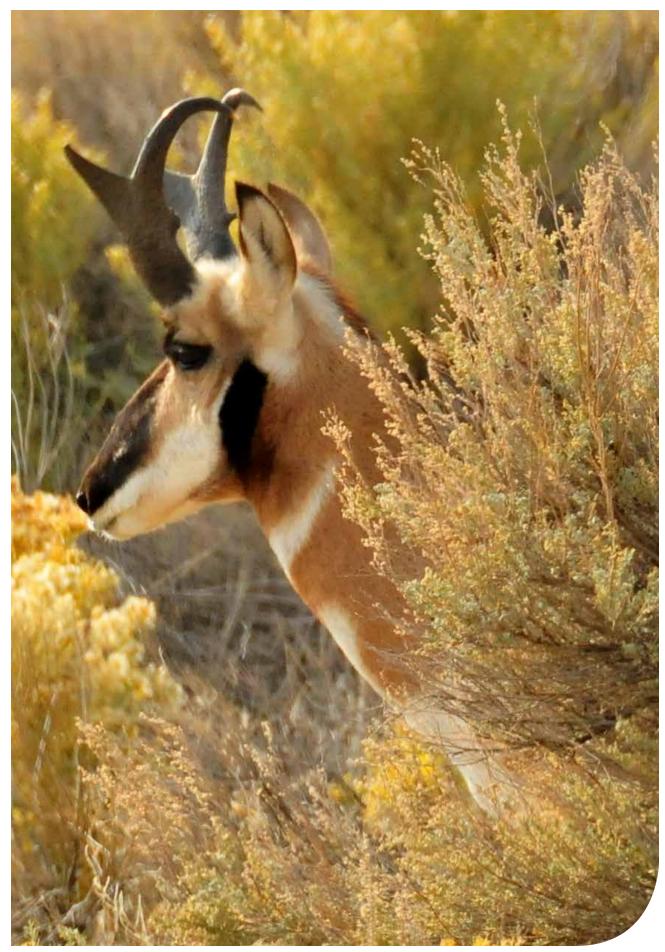
We sage-grouse can fly, but we prefer to walk to get around. Moist **biocrusts** give us hiking paths and walkways. Biocrusts are like multi-colored carpets made of algae, moss, lichens, fungi, bacteria and minerals—the building blocks for soil. They hold moisture that can be scarce in sagebrush steppe. Without biocrusts, soil wears down or erodes, and native plants die for lack of water or a place to take root. That leaves us sage-grouse with nothing to eat and no walking paths.

Biocrusts can also be crushed or trampled in areas heavily traveled by people or other animals. Then, weeds can fill in, grow very tall, take moisture out of the soil and make it hard for me to move around. Weeds also burn very easily in wildfires, making fires happen more often and allowing them to move faster over more area.

So, watch your step in the steppe, and stay on trails when you're on wheels.





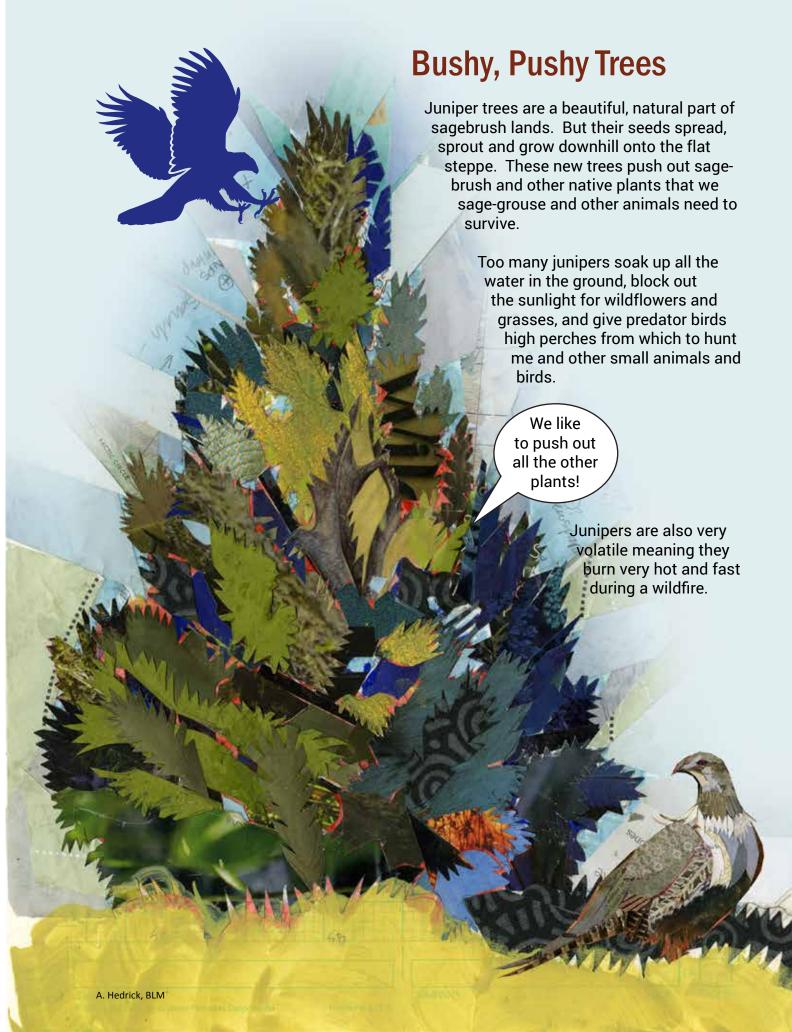


Pronghorn antelope live in the sagebrush steppe. Tom Koerner, USFWS

Sammy's Quest to Save the West—15

Pushy Grasses Invade the Steppe





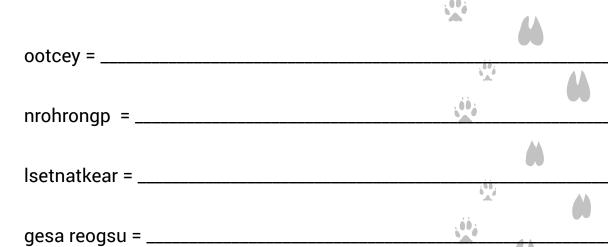
Animals in My Neighborhood

Unscramble the words to find birds, reptiles, insects and mammals. Here are a few to look for.

sage sparrow
pygmy rabbit
badger

mule deer harvester ant ground squirrel

coyote sage-grouse rattlesnake pronghorn golden eagle raven



gympy abirtb = _____

druong reiulrqs = _____

deglno aeegl = _____

lume reed = ____

vsetrerah tan = _____

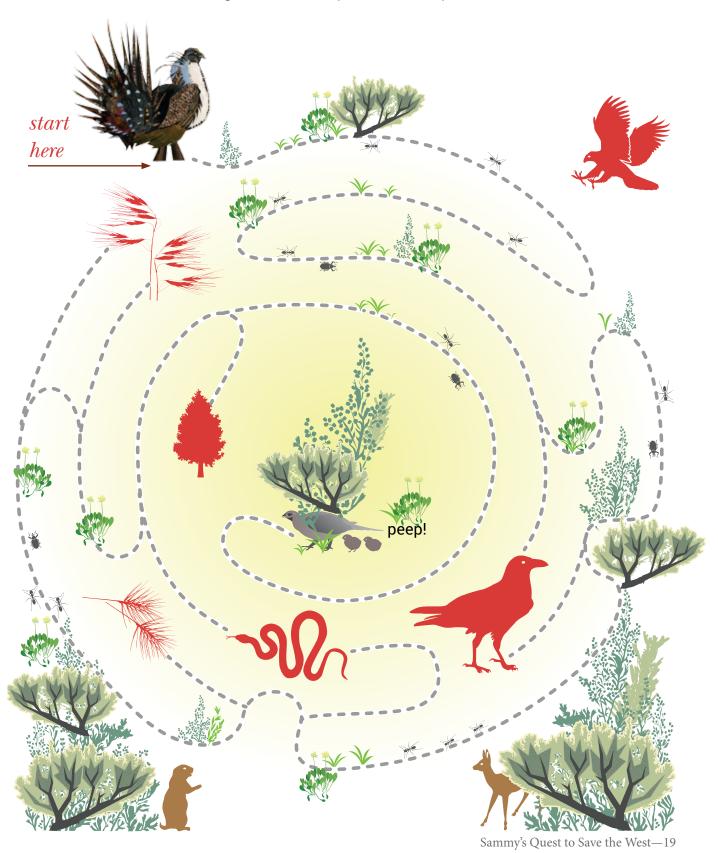
drbgae = ____

gase rwopsar = _____

vrena = _____

Walk Me Home

Now that you know which plants and animals are good for me, guide me along the safest path to my family at the center of the maze. Keep to routes with good sagebrush, wild-flowers, insects and native grasses. Avoid predators and plants that I don't like to eat.

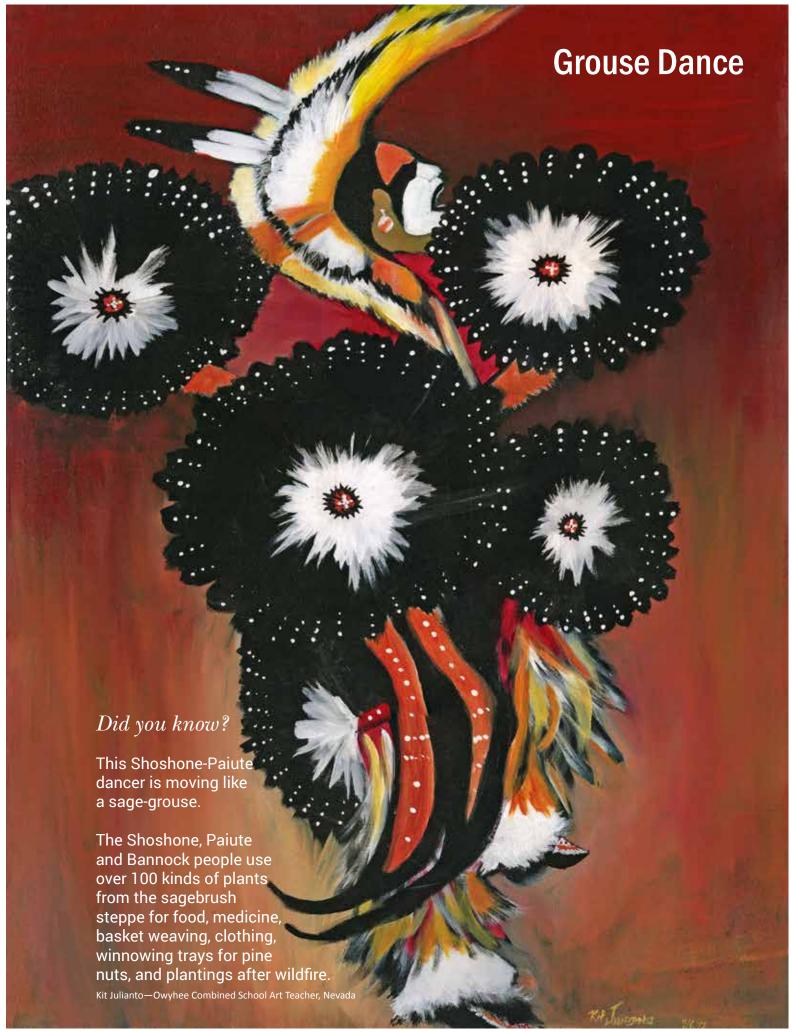


True or False

You've learned a lot about plants and animals in the sagebrush steppe.

Think about each statement below and write "t" next to the ones that are true and "f" next to the false statements.

Sage-grouse, like Sammy, prefer walking to flying.		
Steppe is a name for a large, flat grassland.		
Coyotes, ravens, hawks and eagles hunt sage-grouse.		
Only 5 animals live in the sagebrush steppe.		
Sagebrush provides protection and shelter for Sammy.		
Arrowleaf balsamroot has purple flowers that look like sunflowers.		
Sammy loves to eat cheatgrass and medusahead grass.		
Sammy loves to eat wildlfowers, insects and sagebrush.		
Pygmy rabbits and ground squirrels live in the sagebrush steppe.		
Algae, moss, lichen and fungi are part of the soils that nurture plants.		
Algae, moss, lichen and fungi are some of the biocrusts.		
Biocrusts are moist carpets where Sammy walks between grasses and shrubs.		
Juniper trees are a natural part of Sammy's home.		
Juniper trees can takeover other plants' growing areas.		
More than 350 plants and animals live in the sagebrush steppe.		
Sage-grouse can fly.		



Smart Words

As you explore the sagebrush-steppe, get to know these words.

Match each word in the left column with its correct definition in the right column. Find clues in this book.

Biocrusts plants and animals sharing the same place

Community algae, moss, lichen, fungi and bacteria

Hen and Chick hunter

Predator name of female and baby sage-grouse

Monoculture wearing away

Erosion one group or species

Native Sammy's favorite wildflower to eat

Sulfur Buckwheat large, flat grassland

Steppe natural

You Can Help Us!

Keep our young safe and sound

We need...

- · a roof of sagebrush overhead.
- moist biocrust carpets to use for escaping coyotes that find our nest.
- a nearby lunch line with wildflowers and insects.

So please...

- stay on trails—don't crush our carpets and sidewalks of biocrusts.
- be very careful and safe with campfires and fireworks.
- keep wildflowers, sagebrush, grasses, and other plants from burning.
- learn how plants affect your life.
- look for opportunities to volunteer planting sagebrush or other seedlings.

Thank you, Junior Ranger





A young student writes about his experiments planting sagebrush seedlings in native and commercial soils in Owyhee, Nevada. Drew Nash, Times-News Photo

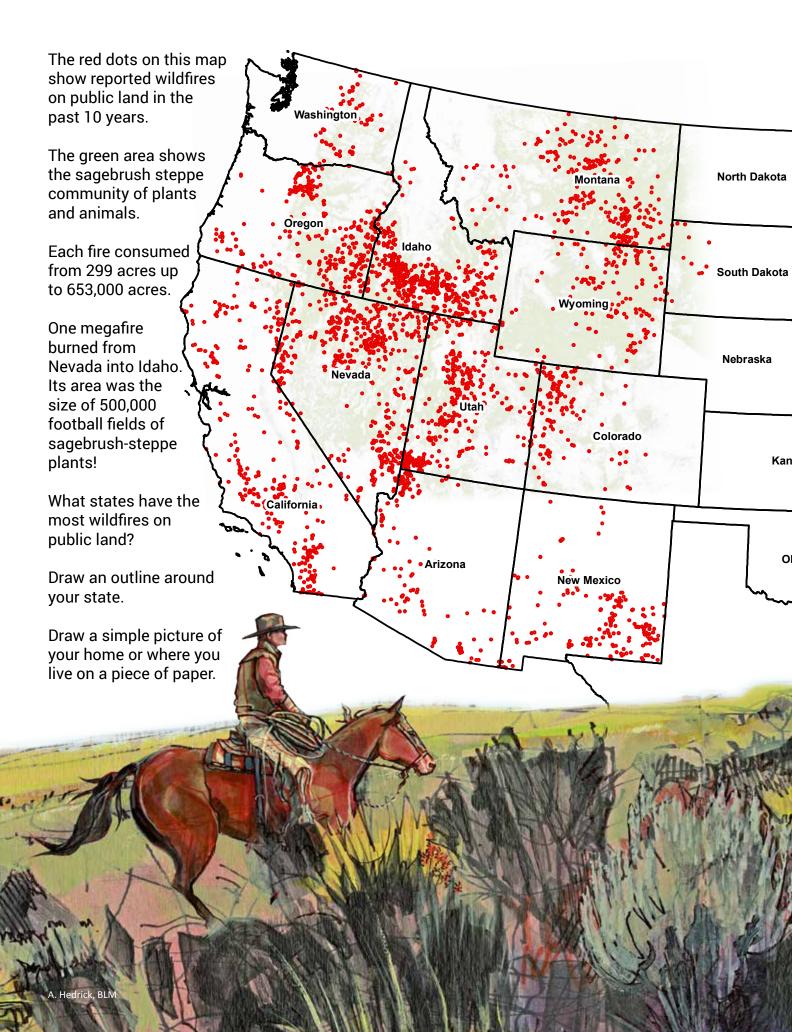


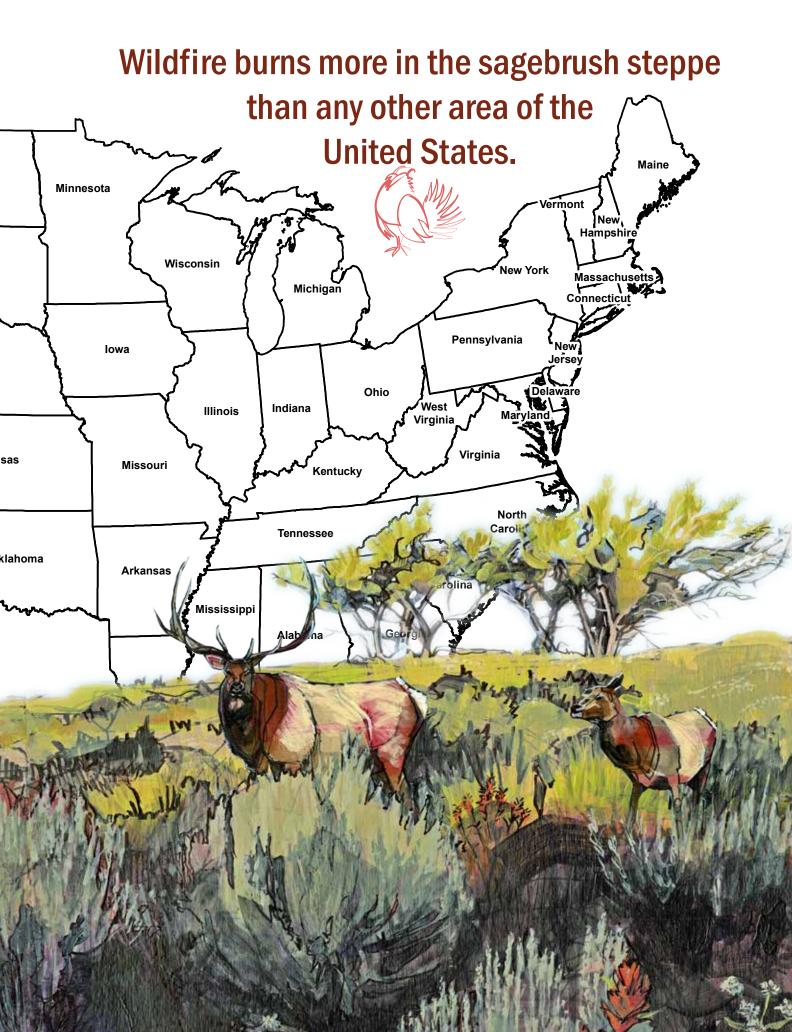


Be Very Careful With Fire and Fireworks

Carelessness causes many wildfires every year.





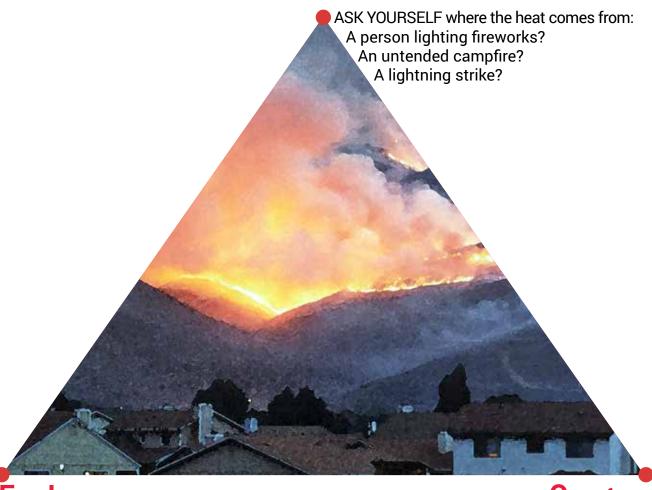


What Feeds a Fire?

Fires need heat, fuel, and oxygen. If any one of the three is eliminated, the fire will go out. Remember this fire triangle.

Lightning, fireworks, campfires, wood stoves, your furnace at home or a burning cigarette provide heat that can easily start a wildfire.

Heat



Fuel

ASK YOURSELF what is burning: juniper or mahogany trees, sagebrush, grasses, wild-flowers or homes?

Oxygen

ASK YOURSELF where the fire gets the oxygen it needs to burn?

Test the Triangle

Experiment 1

Supplies: 7-10 toothpicks, 7-10 gumdrops

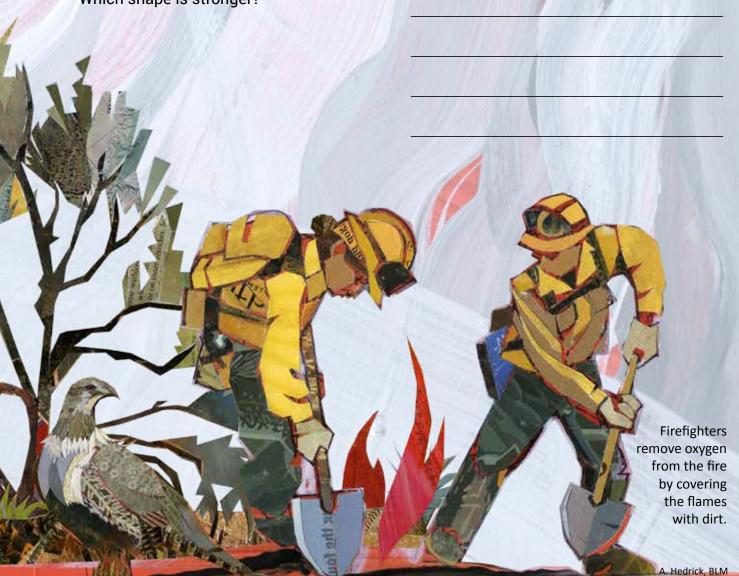
Step 1: Form a square using the toothpicks for the sides and the gumdrops to hold them together.

Step 2: Push gently on the sides. Does the square shape hold?

Step 3: Form a triangle using more tooth-picks and gumdrops.

Step 4: Push gently on the sides. Does the triangle shape hold?

Step 5: Write down what you observed. Which shape is stronger?



Firefighter Word Search

Letters may spell each word forward, backward or diagonally.

Try to find each hidden word.

pulaski shovel hose firefighter dozer fire engine retardant helicopter air tanker dispatch radio water smokejumper hand crew chainsaw

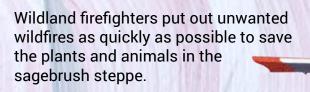
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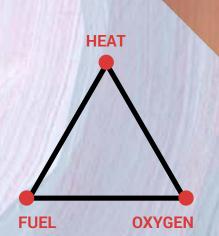
Working Together to Fight Wildfires



Firefighters remove heat, remove fuel (plants) or remove oxygen by smothering the fire.

Firefighters have many tools.

- To remove heat or oxygen from the wildfire, they spray water, foam, or retardant on the flames using engines, airplanes or helicopters.
- To remove fuel from the wildfire, they use shovels, pulaskis, chainsaws, dozers, and mowers to remove vegetation or reduce vegetation height. This creates a line, known as a fire break, that stops large wildfires from spreading.









We sage-grouse can't protect our home from wildfires, but you can protect yours. If you live near public land or a National Forest, your family should **make your home Firewise**. It's easy!

Clear brush, branches and fallen leaves away from your house. Make sure your grass stays green and moist. Trim tree limbs lower than six feet above the ground, and cover openings like vents and space under porches with a screen. These steps can help stop a wildfire from spreading to your home.

ZONE 1 -

<30 feet from house

- low-growing, fire-resistant plants
- no tall trees or shrubs
- irrigate regularly, prune plants, mow or weed-eat grasses, and use gravel or stone mulch
- widely spaced plants

ZONE 2 -

30-60 feet from house

- low-growing fire-resistant plants & shrubs
- thin or remove trees, remove excess plant litter & weeds, and use gravel or stone mulch
- space trees & shrubs2x their height

ZONE 3-

60-100 feet from house

- most existing plants are acceptable
- keep well pruned and remove weeds
- minimize overlapping branches between plants









Steps to a Healthy West for Everyone

What happens when wildfire consumes healthy land?

We have to make a plan!



ng vegetation at higher o action is needed: naturn on

If no plants survive the fire, we have to reseed and plant new seedlings. A healthy West has a mix of sagebrush. native grasses, wildflowers and respectful people.

"Healthy native plants mean healthy wildlife."

Healthy native plants have more moisture and are resistant to wildfires.

fire.

15-20

years

after

5 years after fire.

With time. native plants will grow taller and healthy.



Cheatgrass and medusahead will push out all of the native plants if nothing is done. Then more wildfire will burn the same places every summer and we lose our home.

> SADLY This is happening all over the West and we need your help.

GOOD NEWS

When native seedlings grow, we keep checking on their progress during the year. If they do not survive, we will replant new seedlings.





Care For This Unique Place

I hope you continue to learn about, enjoy and protect the over 350 plants and animals in the sagebrush steppe. Visit a Firewise garden near you in Boise at the Idaho Botanical Garden, Pocatello at Zoo Idaho or Twin Falls at the Breckenridge Endowment Farm on the College of Southern Idaho campus.

Because we are losing our home to wildfire and non-native invaders, we hope you will do your best to be careful with fire, obey fireworks restrictions and travel only on trails or roads when you are in the sagebrush steppe.

You can volunteer to help re-plant areas burned by wildfire. You can work as a botanist, wildlife or fish biologist, firefighter, writer or teacher when you finish school. You can also be a wildlife artist or photographer, or learn to dance like a sage-grouse.





High school students plant sagebrush, bitterbrush and other native plants after a wildfire, started by illegal fireworks, destoyed houses and over 2500 acres of native plants near Boise. Sagebrush seedlings were provided by high school students from Owyhee, Nevada. Deer, elk, pronghorn, birds and other wildlife have lost food and shelter for several years to come.

True or False Two

You've learned a lot about wildfire and the devastating effects of pushy, non-native plants in the sagebrush steppe.

Read the statements below, do your best thinking about them, and write a "t" next to the

ones that are true and an "f" next to those that are false. ______ Lightning, fireworks, campfires, stoves and cigarettes are heat sources.. The sagebrush steppe is the most frequently burned part of the U.S. _It is OK to light fireworks in the sagebrush steppe. Planting seedlings in burned areas helps to restore the land after a wildfire. _Wildland firefighters use different tools to remove heat from a wildfire. _Chainsaws can be used to remove vegetation that fuels an oncoming wildfire. All wildfires are started by careless people. _You can protect yourself by removing flammable plants near your house. Fire needs four elements to burn. Making your home Firewise makes firefighting easier. _Juniper tre<mark>e</mark>s do not burn ver<mark>y</mark> easily. .After a fire, native grasses and plants always come back quickly. _After a fire, it can take 75 years for a single sagebrush to grow back to full size. It is good to use toothpicks after eating gumdrops. _It's good to ride your motorcycle off the road on biocrusts and native plants.

Compare and Contrast

Sometimes, wildfires can't be prevented. Land managers work hard after a fire to keep the soil from eroding, washing or blowing away. The plants needed to rebuild the sagebrush steppe can't regrow without the nutrients in the soil. Native seed and seedlings are planted so that one day, the sagebrush steppe can flourish again.

What are some differences between the two photos on the opposite page? Write some of them down, then explain to a friend what you see.

Which place looks healthier for you, me and 200 other types of animals?		
	Ania Maria	





Field Trip!

Visit an area where you can observe the sagebrush steppe.

etch a picture of the land, a plant or animal you saw.					

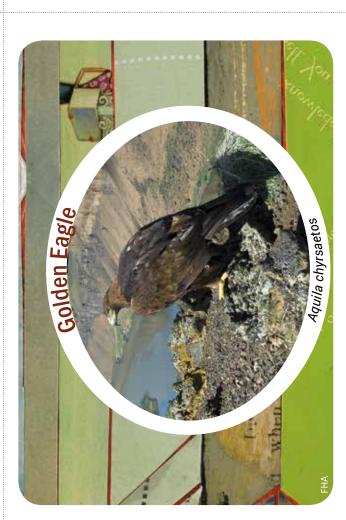
Remember to be part of nature by:

- respecting native plants, animals and people as a living community
- keeping campfires and fireworks away from Sammy's home
- leaving nature as you find it for the next person to enjoy
- not littering—take your trash home to throw away

 $Trading\ Cards$: $Steppe\ into\ the\ Sagebrush$ Tear along perforated lines to assemble your collection of trading cards. Use, share and remember the sagebrush steppe.







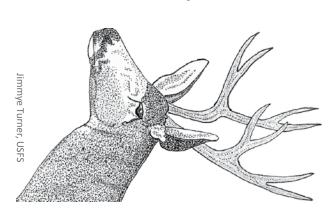


Fun Fact:

Mule deer can see better at night than humans, but not during the day.

Fire Prevention Tip:

Firefighters use thermal nighttime imagery to find hot spots of fire. They cool them down with water and dirt. You can also put out your campfire with water and dirt.

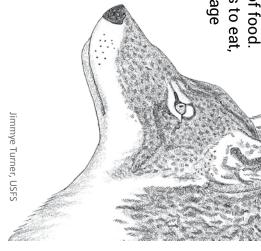


Fun Fact:

A coyote eats a wide range of food. If it cannot find mice or voles to eat, lizards, insects, or even garbage will do.

Fire Prevention Tip: Composting is safer than burning outdoors. You can

compost unwanted food, trash and yard waste.

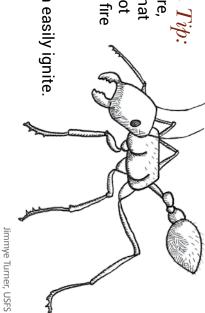


Fun Fact:

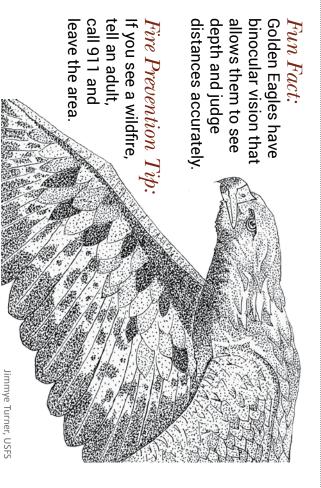
Ants make their homes by digging nests in the ground. They remove all vegetation from an area in a circular pattern, so they are easy to spot.

Fire Prevention Tip:

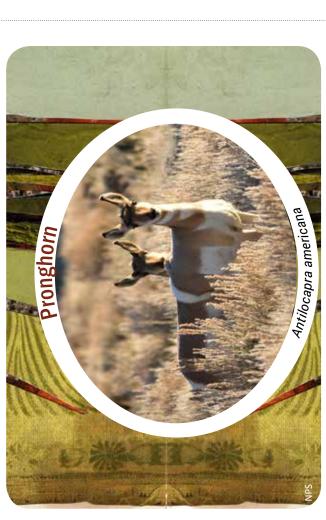
When building a fire, remove anything that will burn in a 10-foot circle to keep your fire from spreading.



Dry vegetation can easily ignite.



 $Trading\ Cards$: $Steppe\ into\ the\ Sagebrush$ Tear along perforated lines to assemble your collection of trading cards. Use, share and remember the sagebrush steppe.









Fun Fact.

skillful flying. chasing small prey close to the ground with fast, Prairie falcons hunt by

Fire Prevention Tip:

water or fire retardant. fly close to wildfires to drop Helicopter and airplane pilots

way so they can do their job Keep your drones out of their



Fun Fact:

sagebrush. 99% of its food from hand. In the winter, it gets rabbit species in North America It fits easily in the palm of your The pygmy rabbit is the smallest

Fire Prevention Tip:

adults are mowing. Be a fire lookout - help watch your hand can easily lose control. A spark or fire smaller than for sparks on dry grass when

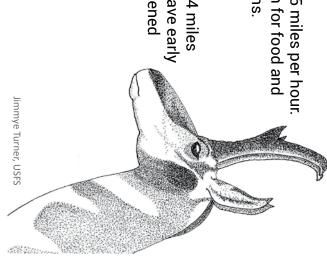
Jimmye Turner, USFS

Fun Fact:

Pronghorn can run up to 55 miles per hour. hiding places for their fawns They depend on sagebrush for food and

Fire Prevention Tip:

by a wildfire. and safely if you are threatened per hour in grasslands. Leave early Wildfires can move up to 14 miles



Fun Fact:

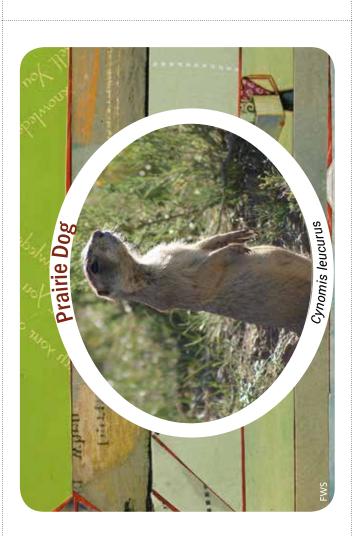
sagebrush, their digests tough stomach that a specialized Sage-grouse have

Protect sagebrush, their food Fire Prevention Tip:

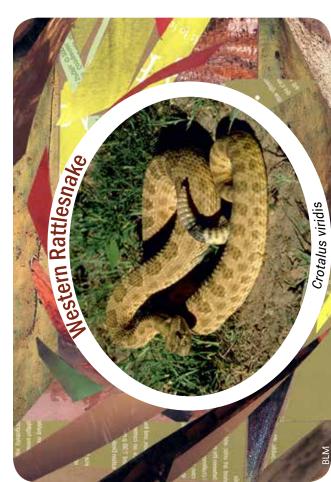
source and home, by preventing wildtires.

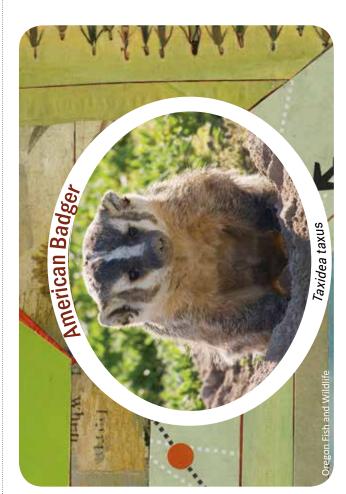


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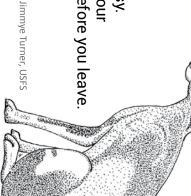




with brown fur in the summer and white fur in the winter. The jack rabbit can camoflauge

Fire Prevention Tip.

campfire is always completely out before you leave. Protect their home by making sure your but finding a new home is not so easy. Jack rabbits can change their color,





Badgers use their long, sharp front claws to dig for rodent prey. make a break for it. This sometimes attracts coyotes, which wait nearby for prey to

Fire Prevention Tip:

Dig, stir, and drown your campfire to make sure it is dead out.

າmye Turner, USFS

Fun Fact:

of danger with a warning bark. Prairie dogs have listening burrows, so they can alert others posts near the exits of their

Fire Prevention Tip:

and follow all fire warnings in the news or posted in campgrounds. high fire danger. Please read hot, dry and windy days signa Listen to nature's warning—



Fun Fact:

until night when it is cooler to hunt. In hot weather, rattlesnakes hide during the day and wait

sure it is completely out cool evenings, but make



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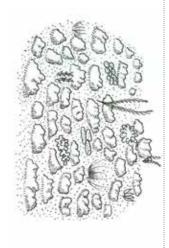


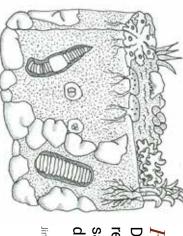




Fun Fact:

Your footrpint can smash me down for a very long time and is very harmful. Please watch out for me, too.





Fire Prevention Tip:

During hunting season, remember wildfire and hunter safety while enjoying the outdoors.

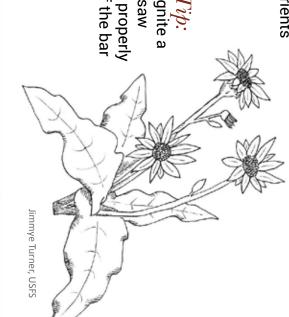
Jimmye Turner, USFS

Fun Fact:

I sprout very soon after a fire, ready to use the nutrients in the ashes.



Sparks may fly and ignite a wildfire if your chainsaw spark arrestor is not properly serviced or the tip of the bar strikes a rock.



Fun Fact:

The colorful top of the paintbrush is actually leaves and they come in many colors like red, pink, yellow, white and fuchsia.

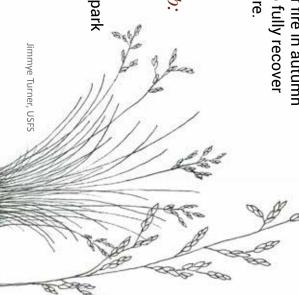
Fire Prevention Tip: Whenever an open flame is used to start a fire, safety and caution are necessary. Watch where flames are

Jimmye Turner, USFS

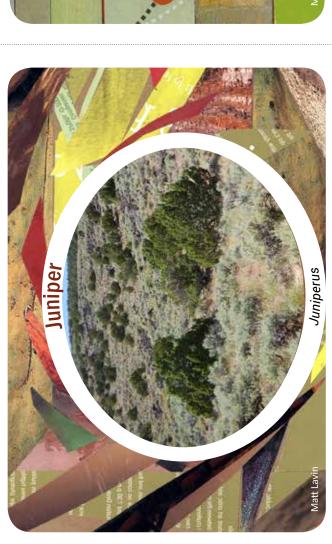
Fun Fact:

We are fairly tolerant of fire in autumn but require 2-3 years to fully recover after burning in a wildfire.

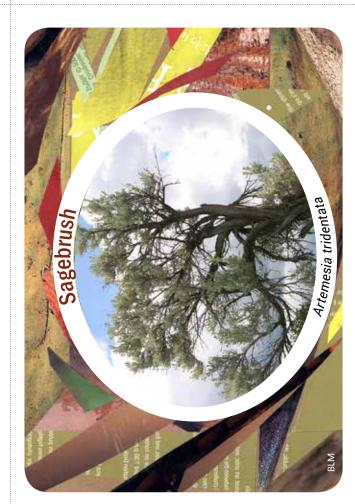
Fire Prevention Tip: When you hook up your trailer, shorten your tow safety chain. Dragging chains may spark a wildfire.



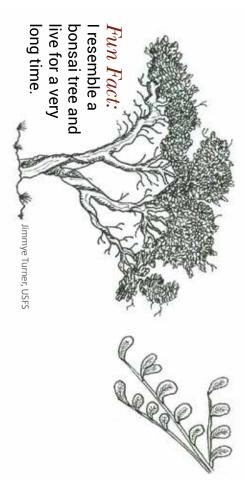
 $Trading\ Cards$: $Steppe\ into\ the\ Sagebrush$ Tear along perforated lines to assemble your collection of trading cards. Use, share and remember the sagebrush steppe.











Fire Prevention Tip:

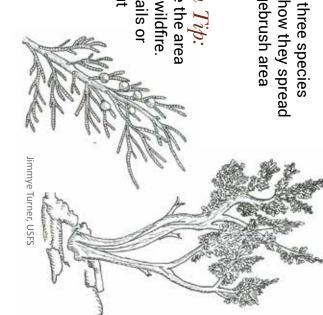
Before building a camp fire, verify local fire restrictions and weather conditions.

Fun Fact:

Idaho has at least three species of juniper. Notice how they spread into the flatter sagebrush area in the front photo.

Fire Prevention Tip:

When hiking, leave the area at the first sign of wildfire. Use established trails or roads. Think about wildfire safety.

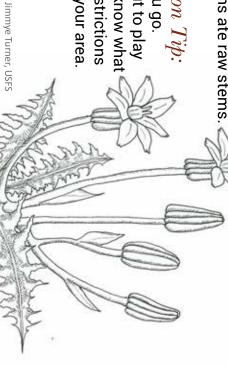


Fun Fact:

Native Americans ate raw stems.

Fire Prevention Tip:

Know before you go.
When you go out to play
on public land, know what
fire rules and restrictions
are in place for your area.

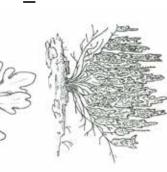


Fun Fact:

Cowboys used sagebrush as a deodorant before heading to town.

Fire Prevention Tip:

Before your road trip, check your wheel bearings, brakes and muffler.
Make sure no metal parts are dragging underneath your vehicle.



 $Trading\ Cards$: $Steppe\ into\ the\ Sagebrush$ Tear along perforated lines to assemble your collection of trading cards. Use, share and remember the sagebrush steppe.









Not-so-fun Fact:

We are an invasive, noxious weed not eaten by sage-grouse. We are sometimes eaten by grazing animals when we are green.

Fire Prevention Tip:

Fireworks burn cheatgrass very fast and have destroyed homes. Please do not ignite fireworks on public land or at the edge of your town!

A sparkler tip burns at a temperature of more than 1,200 degrees; it can easily ignite dry grass or debris.



Not-so-fun Fact:

Medusahead has little value for wildlife. Most wildlife will not eat it because it has a high level of silica (glass).

Seeds can cause injury to eyes, noses, and mouths of animals who eat it. Medusahead typically takes over sites where the native plants have been destroyed by fire or eaten up.

Fire Prevention Tip:

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A sparkler tip burns at a temperature of more than 1,200 degrees; it can easily ignite dry grass or debris.

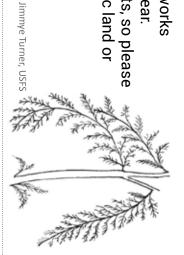
A. Hedrick, BLM

Fun Fact:

We are found in many native plant communities. We are a food source for bighorn sheep, pronghorn antelope and deer. Sage-grouse and other upland birds rely heavily on our foliage as food.



Accidental fires caused by fireworks destroy valuable plants every year. Wildlife depends on these plants, so please do not ignite fireworks on public land or forests.

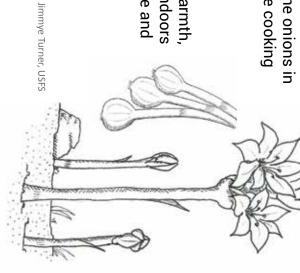


Fun Fact:

My entire plant smells like the onions in your kitchen like when you're cooking spaghetti sauce.

Fire Prevention Tip:

Each time you use fire for warmth, cooking or just enjoyment indoors and outdoors, be responsible and safe with and around it.



Please Join the Quest

As a BLM Junior Ranger, I promise to

- Do all I can to help protect and preserve natural and cultural resources on public lands.
- Be aware of how my actions can affect living things and evidence of our past.
- Keep learning about the importance of nature and our heritage.

Share what I have learned with others. Congratulations! you sign here

